

## REMARKS

Claims 69-81 and 83-87 are currently pending in the application. Claims 69-87 stand rejected. Applicant has canceled claim 82 and amended claims 69, 76, 79, 84, and 85. Applicant respectfully requests reconsideration of the application as amended herein.

Support for the amendment to claim 69 may be found at paragraphs 36 and 134 of Applicant's specification. Support for the amendment to claim 76 may be found at paragraph 134 of Applicant's specification. Support for the amendment to claim 79 may be found at paragraphs 36 and 134 of Applicant's specification. Support for the amendment to claims 84 and 85 may be found at paragraph 36 of Applicant's specification. Support for new claim 89-91 may be found at paragraphs 94 and 176 of Applicant's specification.

The examiner also requested that Applicant provide the chemical structure for each species of claim 76. Applicant's amendment to claim 76, therefore, has replaced the chemical names for the claimed species with compound structures. In addition, some compounds have been deleted consistent with the limitations in claim 69.

Applicant has also amended the specification. The amendments to the specification correct typographical errors and do not involve new subject matter. The amendments insert the prefix "di" or "tri" where it is clear to one of ordinary skill in this art that two or three of the same substituent are identified in a particular compound's name but the prefix was inadvertently omitted.

## Notice of References Cited (PTO-892)

Please note that only Nicolosi et al. and International Publication No. WO 01/60774 cited on the PTO-892 form (part of Paper No. 20081022) were provided in their entirety with the office action. Copies of the other cited references were not provided, only their abstracts.

## Interview Summary

Applicant thanks Examiners Chukwuma Nwaonida and Jafar Parsa for the helpful interview with Ryan Marshall on March 20, 2009. The rejections of record were

discussed. Applicant agreed to amend claims 69 and 79 to overcome the anticipation rejection based on Scaramuzzino discussed below. Applicant agreed to amend claims 69 and 79 to overcome the anticipation rejection based on Nicolosi also discussed below. It was agreed that these amendments and differences identified by the Applicant between the cited art and claims would overcome the present rejections.

The examiners also invited Applicant to comment on the nonobviousness of the claims in light Nicolosi. Applicant has amended claim 69 to exclude the adjacent homologs of compounds disclosed by Nicolosi, as summarized below.

### **35 U.S.C. § 103(a) Obviousness Rejections**

Claims 69, 73, 75 and 76 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Engler et al. (Journal of Organic Chemistry 60(12) 3700-3706) and Gokaraju et al (WO 2004000302<sup>1</sup>). Copies of these references are provided in their entirety for full consideration. Applicants respectfully traverse this rejection, as hereinafter set forth.

M.P.E.P. 706.02(j) describes the standard for a Section 103(a) rejection:

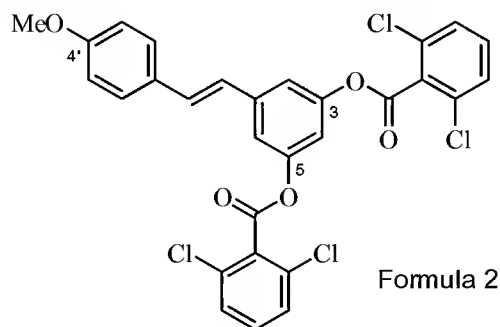
To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (Emphasis added).

The 35 U.S.C. § 103(a) obviousness rejection of claims 69, 73, 75, 76 is improper. The cited art fails to disclose each and every limitation of the claimed compounds. The claims cover compounds which are esters of resveratrol, namely compounds where one or more of the 3, 5, and 4' positions of resveratrol are esterified.

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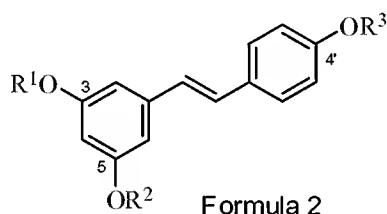
<sup>1</sup> WO 2004000302 corresponds to US Patent No. 7,026,518.

The Office Action indicates that Engler discloses the compound of Formula 2.<sup>2</sup>



Applicant respectfully submits that the compound identified from Engler has an ether group at the 4' position, not an ester. Ethers and esters are different chemical groups. Moreover, the cited compound is a synthetic intermediate in the synthesis of *trans*-2,3-diaryl-2,3-dihydrobenzofurans.

The Office Action also indicates that Gokaraju<sup>3</sup> discloses compounds of the formula:



and specifically references page 4, lines 1-5 (compounds 6 & 7).

The Office Action asserts that the claimed compounds would be obvious homologs in view of the compounds cited from Engler and Gokaraju. Specifically, the Office Action compares the hydroxyl group (OH) in the claimed compounds to the alkoxy groups (for example OCH<sub>3</sub>) in the cited references and states “hydrogen versus methyl group is obvious because of their property relationships.” (Office Action at p. 4 citing *In re Henze*, 85 USPQ 261, 263 (CCPA 1950).) This conclusion is improper.

Hydroxyl and alkoxy groups are not homologous. Moreover, the cited case does not establish that compounds differing by substitution of hydrogen and methyl are either homologous or that they possess the same properties. In fact, the Manual of Patent Examining Procedure acknowledges the impropriety of per se rules. See MPEP §

<sup>2</sup> The Office Action refers to the reference's abstract for disclosure of the cited compound, but the abstract does not refer to the compound. It instead appears as compound 2f at Table 1.

<sup>3</sup> WO 04/000304

2144.08(II) citing *In re Brouwer*, 77 F.3d 422, 425 (Fed. Cir. 1996), *In re Ochiai*, 71 F.3d 1565, 1572 (Fed. Cir. 1995).

At the interview held March 20, 2009, the participating examiners agreed that hydroxyl groups and alkoxy groups are not homologous. Applicant, therefore, respectfully requests withdrawal of the obviousness rejection of claims 69, 73, 75 and 76.

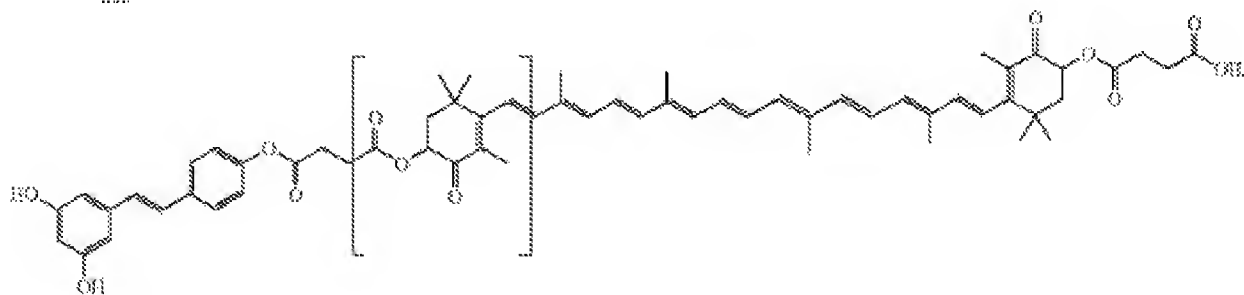
### 35 U.S.C. § 102 Anticipation Rejections

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

#### Lockwood

Claims 69, 72, 75, and 76 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Lockwood et al. (U.S. Patent No. 7,145,025 or WO 2004011423). Applicant respectfully traverses this rejection.

Lockwood fails to disclose each and every limitation of claim 69, 72, 75, and 76. The Office Action indicates that Lockwood discloses the compound:<sup>4</sup>



It is respectfully submitted that the compound identified from Lockwood has a functional group (highlighted above) that does not fall within the scope of claims 69, 72, 75, and

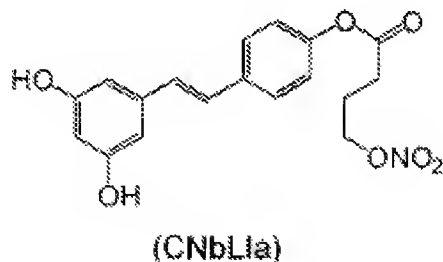
<sup>4</sup> The Office Action refers to the reference's abstract for disclosure of the cited compound, but the abstract does not refer to the compound. It instead appears in columns 45 and 46 of U.S. Patent No. 7,145,025.

76. In other words, the highlighted group does not fall within the meaning of “alkyl with at least two carbon atoms, aryl, and aralkyl.” Moreover, claim 75 recites that when  $R_1$ ,  $R_2$  and  $R_3$  are present, each is independently saturated alkyl. The highlighted group is not saturated alkyl. Further, claim 76 recites a number of specific compounds. The cited compound is not identified in the listed compounds recited in claim 76.

For at least these reasons, Lockwood fails to teach each and every limitation of claims 69, 72, 75, and 76. At the interview held March 20, 2009, the participating examiners agreed that the compound identified from Lockwood did not anticipate claims 69 and 72 as amended herein, or claims 75 and 76 as previously presented. Applicant, therefore, respectfully requests withdrawal of the obviousness rejection of claims 69, 73, 75 and 76.

### **Scaramuzzino**

Claims 69-72 and 75-78 stand rejected under 35 U.S.C. § 102(a) as being anticipated by Scaramuzzino (EP Patent No. 1 336 602). The Office Action indicates that Scaramuzzino discloses the compound:<sup>5</sup>



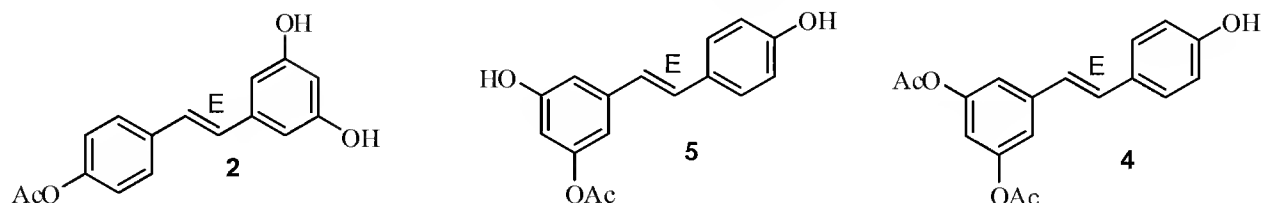
Applicant has amended claims 69-87 so that when  $R_3$  is alkyl, it is unsubstituted. Applicant believes the amendment obviates the rejection. At the interview held March 20, 2009, the participating examiners agreed that the compound identified from Scaramuzzino did not anticipate claims 69 or its dependent claims 72 and 75 (as claim 69 is amended herein), or claims 70, 71, and 76-78 as previously presented. Applicant, therefore, respectfully requests withdrawal of the obviousness rejection of claims 69-72 and 75-78.

<sup>5</sup> The Office Action refers to the reference's abstract for disclosure of the cited compound, but the abstract does not refer to the compound. It instead appears as compound CNbL1a at page 119.

**Nicolosi**

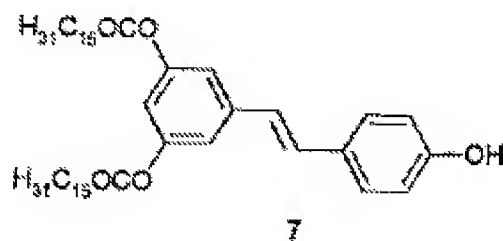
Claims 69, 70, 73, and 74-84 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Nicolosi et al. (Chemo-enzymatic preparation of resveratrol derivatives, J. Mol. Catalysis B: Enzymatic (2002), 16(5-6), 223-229).

To begin with, Applicant notes that three compounds identified in the Office Action do not fall within the scope of previously presented claims 69, 70, 73, and 74-84. The cited compounds have an acetate group as shown below.



None of these compounds was covered by any of Applicant's claims. Applicant's claims require that when a non hydroxyl substituent is present at any of the 3, 5, and 4' positions, that the substituent be an ester where the alkyl portion of the ester has at least two carbon atoms—in other words, any ester at the 3, 5, and 4' position could not be acetate. The alkyl portion of the acetate group identified in compounds 2, 4, and 5 of Nicolosi has a single carbon atom. Thus, none of those compounds anticipate Applicant's claims.

The Office Action also indicated that Nicolosi discloses the compound:

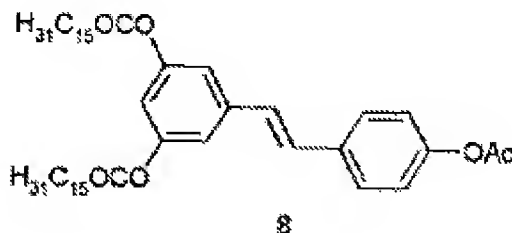


Applicant has amended claims 69 and 76 to exclude the identified compound. Applicant believes the amendment obviates the rejection.

In addition, Applicant has amended claims 69, 76, 79, and 84 to exclude 5,4'-dihydroxy-3-propanoate stilbene, 3,5-dihydroxy-4'-propanoate stilbene, and 4'-hydroxy-3,5-dipropanoate stilbene, the adjacent homologs of compounds 2, 4, and 5 disclosed

by Nicolosi. (See pp. 226-227.) The adjacent homolog of compound 3 was already excluded by the limitation that “at least one of A<sub>1</sub>, A<sub>2</sub>, and A<sub>3</sub> is different from one another.”

Also, Applicant has amended claim 69 to exclude 3,5-dihexadecanoate-4'-propanoate stilbene, the adjacent homolog of compound 8 disclosed by Nicolosi. (See p. 228.)



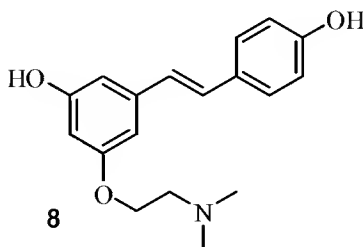
Applicant's claims, therefore, do not include the adjacent homologs of compounds 2, 4, 5, 7, and 8 from Nicolosi.

Applicant also notes that Nicolosi does not enable one of ordinary skill in this art to obtain esters of different alkyl length at the 3 and 5 positions of compounds 7 and 8. Applicant's disclosure, however, does enable the synthesis of such compounds. Thus, Applicant has not excluded adjacent homologs to compounds 7 and 8 where an ester at the 3 or 5 position is increased or decreased by a CH<sub>2</sub> unit.

### **Gokaraju**

Claims 69, 70, 73, and 74-84 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Gokaraju et al. (WO 2004000302). Applicant respectfully traverses this rejection.

The Office Action refers to page 5, line 5 of the reference which identifies the following compound:



Applicant respectfully submits that the compound identified from Gokaraju has an ether group at the 5 position, not an ester. Ethers and esters are different chemical groups. Gokaraju, therefore, fails to disclose a compound anticipating claims 69, 70, 73, and 74-84.

### CONCLUSION

Claims 69-87 are believed to be in condition for allowance, and an early notice thereof is respectfully solicited. Should the Examiner determine that additional issues remain which might be resolved by a telephone conference, he is respectfully invited to contact Applicants' undersigned attorney before taking further action.

Respectfully submitted,

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